



Systematic Entomology Laboratory

## Instructions for Slide-Mounting Aphids



1. a. Place aphids in cold 10% solution of KOH (potassium hydroxide) for 24 to 48 hours to soften body contents. [Specimens should not be left in KOH any longer than is necessary to soften body contents because KOH destroys or lightens the natural body color that is frequently used in identifications.]  
  
Or
  - b. Heat the KOH for 10-20 minutes (or until body contents have softened) on a hot plate set at 110° F. Make sure to cover specimen dish to prevent evaporation.
2. Using a sharp probe or needle, make a small incision on the side of the abdomen. If several specimens are being prepared, vary the location of the incision so that among the specimens there are some complete left and right abdominal margins.
3. With a small spatula or other tool, gently press down on abdomen and tease out body contents. If the body contents do not all come out after pumping, place specimens back onto hot plate for another 5 minutes or place into a solution of half dishwashing detergent-half distilled water for 3 minutes.
4. Pump specimens in distilled water and leave for 5 minutes.
5. If specimens are colorless, they can be stained with double stain. Leave in stain 5 minutes. If lighter stain is desired, mix stain with distilled water or 70% EtOH.
6. Pump in 70% EtOH and leave for 5-10 minutes.
7. Pump in 95% EtOH. If specimens are stained too dark, add water, a drop at a time, to remove some of the stain. Leave in 95% EtOH for a minimum of 5-10 minutes.  
Note: The presence of water in legs or antennae can cause them to collapse so make sure specimen is in EtOH long enough.
8. Transfer to clove oil for a minimum of 5 minutes. Gently pump specimens to remove excess EtOH. Specimens can be left overnight in clove oil if there is not time for mounting on a slide.
9. Place drop of thin Canada balsam in the center of a slide. [Thin balsam with histoclear instead of xylene.] Gently transfer specimens to slide. If specimens are small enough to allow for mounting 3-4 or more on a slide, mount at least one ventral

side up. When mounting aphids, representatives of all stages (aptera, alate, alatoid nymph, smaller nymphs) should be included on each slide as space and material allows. Place specimens on slide head pointed down with younger stages to the left and older alate adults to the right. Do not mount aphid nymphs on slides without at least one adult.

10. Carefully place coverslip over balsam. Place slide on hot plate to spread balsam evenly.
11. Cure slides in a 110°F oven (40°C) for one month so the balsam is no longer soft. If no oven is available, slides can be left undisturbed for 2 months at room temperature.
12. Place a slide label to the left of the coverslip which contains the following information if available:

*Genus*  
*species* Author  
*Host*  
Date(7-IV-2000)  
STATE or COUNTRY, City, County  
Collector  
Specimen ID number

13. To remount a balsam mount place slide in histoclear to dissolve old balsam then follow mounting procedure.

## Materials

The following list of tools and chemicals can be ordered from any available company. When individual company names are mentioned, this is done as general reference and does not represent an endorsement by the USDA.

- 95% EtOH
- 70% EtOH - Made from 95% stock
- 10% KOH - Made by placing 14 pellets into 50ml of distilled water
- Double Stain - BioQuip, Gardena CA 310-324-0620
- Clove Oil
- Canada Balsam
- Histo-clear - National Diagnostics, Atlanta GA 800-526-3867  
(citrus oil, available at most grocery stores, can be used as a substitute)
- Microscope slides
- 18mm cover slips
- small specimen dishes or stender dishes (about 2mm diameter)
- watch glass to cover specimen dishes
- Wilkey Microslide Tool set (BioQuip) or insect pins